

„CREDIT HOLIDAYS" - ORIGINS AND COST-EFFECTIVENESS ANALYSIS OF USE BY ELIGIBLE BORROWERS USING SELECTED EXAMPLES

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Abstract

The occurrence of negative phenomena over the past two years: the Covid-19 pandemic, the temporary disruption of supply chains, the war in Ukraine and the energy crisis has affected many aspects of the global economy, including the rise in inflation and interest rates. All borrowers, including more than two million households in Poland repaying home loans, have been affected by these changes - most notably visible in the dynamic increase in lending rates. In order to help borrowers repay the instalments of such loans granted in zloty, the Legislator introduced legislation in July 2022 allowing for the use of „credit holidays". The purpose of this article is to present the results of a study carried out on the basis of sample home loans - the impact of the introduction of „credit holidays" on the level of loan principal and instalments, assuming that all the money saved from the suspension of instalments is used to overpay the loan.

Keywords: mortgage loans, credit holidays, residential property market, housing loans market, interest rates.

JEL Class: G18, G21, G28, G51.

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INTRODUCTION

Housing loans constitute a significant part of the loan portfolio of many banks operating on the Polish market. They mainly have a large share in financing newly built flats and houses. Currently, as a result of the turbulence in the financial markets resulting from the occurrence of a large number of negative events on a global scale in a short period of time (the Covid-19 pandemic, the war in Ukraine, the energy crisis), a dynamic increase in inflation has been widely observed.

In response, the European Central Bank¹ and the central banks of many other countries raised their base interest rates – in Poland the cycle of increases began on 7 October 2021. At the same time, there was an increase in the WIBOR 3M rate used by banks to set interest rates on housing loans, which from June 2020 to September 2021 was at a record low level of 0,21%–0,26%, and rose from this level during the year to 7,25%². As a result, there was a surge in interest rates on loans in Poland, including housing loans.

In order to counteract the negative effects of increase in interest rates on these loans, the Legislator introduced a law in July 2022 containing provisions on so-called "credit holidays". Their essence is to suspend the payment of eight instalments of a PLN housing loan on payment dates selected by the borrower until the end of 2023.

This article first characterizes the real estate market in Poland – presenting the dynamics of the growth of real estate transaction prices, as well as the growth of the number of functioning loan contracts and their value. Then, it discusses changes in the housing and credit market resulting from the outbreak of the Covid-19 pandemic and the energy crisis. The reasons for the introduction of „credit holidays” for borrowers with a housing loan are discussed. The empirical part presents the design of the fixed instalment in a mortgage and its sensitivity to interest rate increases. The results of calculations for two different sample credit exposures granted in 2010 and 2020, for which an analysis related to the use of „credit holidays” was performed, are presented. The assumption was made that the borrower would use all of the instalments saved to overpay the loan at the end of the “credit holidays” program.

The paper verifies two research hypotheses:

- 1) The borrower’s use of “credit holidays” will reduce the loan principal at the end of 2023 by min. 5% compared to the value of the loan principal that was repaid according to the original schedule;

¹ The European Central Bank hiked key interest rates four times in 2022 - on 27 July, 14 September, 2 November and 21 December. The deposit rate increased by a total of 2,5 percentage points to 2,0% , the lending rate by 2,5 points to 2,75% and the refinancing operations rate by 2,5 points to 2,5%. Reported as: (www1).

² (www2).

- 2) Borrower's recourse to "credit holidays" will reduce the fixed instalment amount at the end of 2023 by at least 10% compared to the fixed instalment amount that was repaid according to the original schedule.

1. CHARACTERISTICS OF THE HOUSING MARKET AND HOUSING LOANS

The purchase of a flat or house is one of the most important decisions taken by adult Poles. Having one's own home is important for one's living comfort, family planning, stability and sense of security. Since the 1990s, there has been a systematic increase in the construction and sale of dwellings in Poland, with the peak in the housing boom occurring in the last ten years. According to Antczak-Stepniak et al. (2021), there is a clear division in Europe between developed and mature mortgage markets as well as those of Eastern European countries, which are creating their own housing finance systems showing high growth dynamics.

Chart 1 presents the number of dwellings per 1,000 inhabitants for Warsaw, the six and ten largest cities in Poland (jointly) and for the whole country in the years from 2005 to 2021.

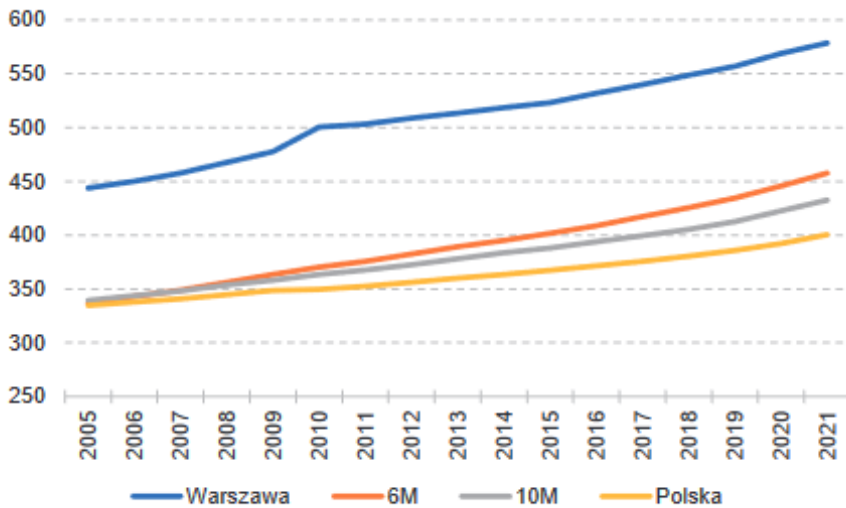


Chart 1. Number of dwellings in stock per 1,000 population

Source: National Bank of Poland (2022).

There is a clear upward trend in each of the analyzed data groups: Warsaw, the group of six largest Polish cities (6M), the group of ten largest Polish cities (10M) and for the country as a whole, with the lowest number of dwellings per 1,000

inhabitants for the whole country that amounts to 400 dwellings. The housing situation is by far the best in Warsaw, where there are approximately 570 dwellings per 1,000 inhabitants. According to the estimates of the National Bank of Poland in 2021, the stock of dwellings amounted to approximately 15,3 million units (an increase of 1,6% year-over-year, i.e. by 234,7 thousand (NBP, 2022).

It should be added that a large proportion of newly built dwellings were purchased using credits. The bank's credit policy and the granting of mortgages is one of the important factors influencing the development of the residential property market, which in turn, has a major impact on the country's economy as a whole. The relationship between these sectors is shown in Figure 1.

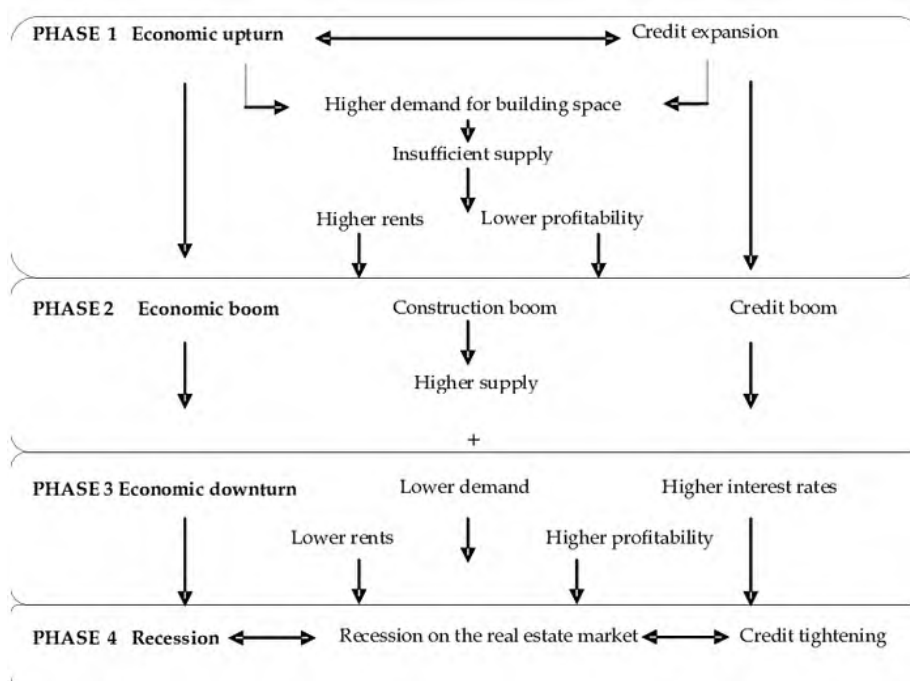


Figure 1. Real estate market cycle

Source: Barras (1994).

From 2008 to 2021, stable growth could be observed in the residential property market and a related increase in the number of housing loans and their value. In 2022, there was a decline in the number of loan agreements concluded and the total stock of mortgage loans, and in the real estate market – as measured by the average transactional price for the purchase of 1 m² of housing. In addition, there

was a spike in interest rates in 2022. The rationale presented according to the Baras diagram (Figure 1) is a sign of a crisis in the real economy. The data presented in Charts 2 and 3 can confirm this information.

The number of active housing loan contracts between 2008 and Q3 2022 is shown in Chart 2.

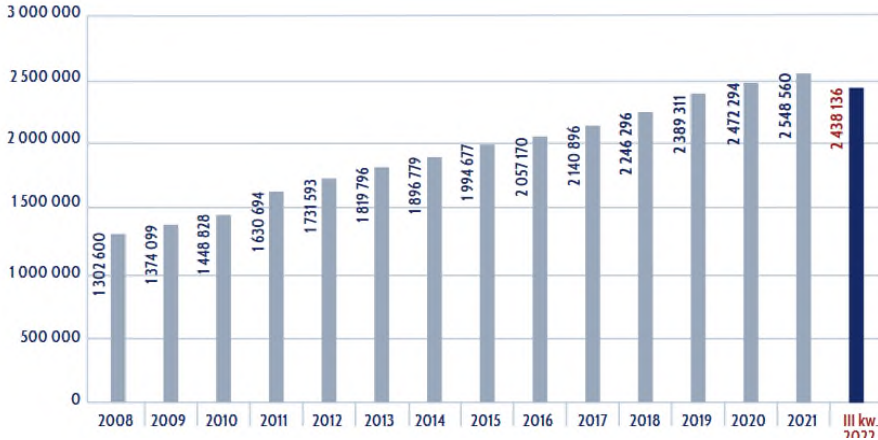


Chart 2. The number of active housing loan contracts

Source: ZBP (2022).

According to the data for 3Q2022, there was a marked decrease in the number of total active housing loan contracts.

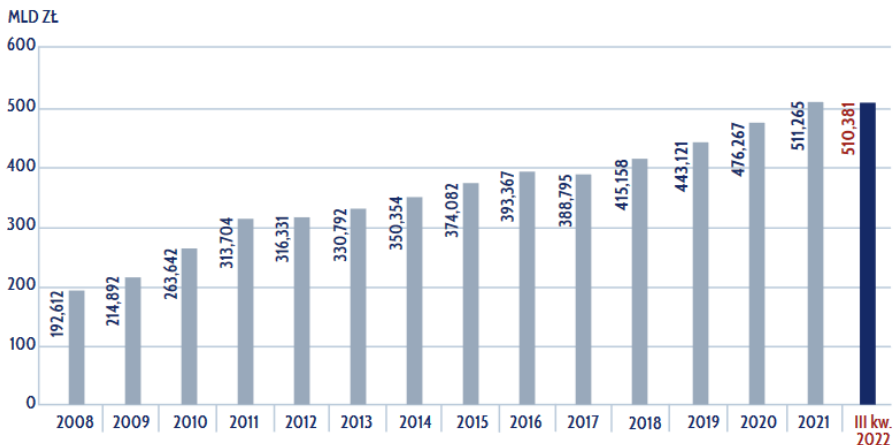


Chart 3. The value of housing loans in Poland

Source: ZBP (2022).

As of Q3 2022, there was a decrease in total housing loan debt.

The credit growth in previous years, which can be observed in Chart 3, was also somewhat influenced by government programs supporting borrowers purchasing their first home. As noted by Willman and Maciejasz-Świątkiewicz (2020), three programs were in operation in Poland between 2006 and 2018: "Rodzina na Swoim", "Mieszkanie dla Młodych" and "Mieszkanie Plus". The real support for borrowers received in the program "Rodzina na Swoim"³ (subsidized interest payments on preferential housing loans for 8 years, the program operated from 2006 to 2013) and "Mieszkanie dla Młodych"⁴ (subsidized own contribution, the amount of which was determined mainly by the number of children the borrowers had). It should be added that the assistance obtained thanks to these two programs concerned:

- 181 563 loans granted with a total value of PLN 32,95 billion ("Rodzina na Swoim" program⁵);
- more than 100,000 persons who received support for a total amount of PLN 2.8 billion ("Mieszkanie dla Młodych" program).

At the same time, together with an increase in lending financing the purchase of flats resulting, in addition to the above described programs, primarily from an increase in the population's income, a decrease in mortgage interest rates and the loosening of lending policy for this group of borrowers by the majority of banks, an increase in transactional prices for the purchase of flats has also been recorded over the last 10 years. Currently, the average transaction prices of 1 sq m. flats in the presented largest Polish cities are approximately 40–50% higher than in 2010. This has a significant impact on the amount of the loan if one wishes to purchase a property with it. A simple calculation shows that in 2010, a borrower buying a 50-square meter flat on a loan, e.g. in Łódź, would have to take out a loan of PLN 160,000 (PLN 4,000 * 50m² - 20% own funds), while in 2021, for a flat of the same size and with unchanged own funds, the required loan amount would be PLN 240,000. Further increases in property prices at the present time (as of December 2022) have slowed down. As noted in the literature, further financing of housing purchases at an acceptable level of LTV and a simultaneous increase in the unit amount of a housing loan (Barrell et al., 2017), in the long term may manifest itself in a deterioration of the quality of the loan portfolio.

³ Act of 8 September 2006 on financial support for families in the acquisition of their own dwelling (Dz.U. 2006. No. 183, item 1354).

⁴ Act of 27 September 2013 on State aid for the purchase of the first home by young people (Dz.U. 2013, item 1304).

⁵ Document adopted by the Council of Ministers on 29 March 2013. (Warsaw 2013), *Information on the implementation of the government programme of preferential housing loans "Rodzina na Swoim" and intentions on the introduction after 31 December 2013 of systems supporting families in meeting housing needs.*

The following conclusions can be drawn from the information presented in Charts 2 and 3:

- a) from 2010 to the present, the number of active housing loan contracts has increased by 68% and the total outstanding balance of housing loans has increased by 93%;
- b) the average active home loan contract⁶ in 2010 was PLN 181,969 and in 3Q2022 PLN 209,332;
- c) from 2018 onwards, the marked increase in house prices determined the increase in the value of housing loans taken out;
- d) until 2021, the housing loan market was characterized by dynamic growth, while from 2022 onwards there has been a noticeable decline in both the number of active contracts and the total stock of housing loan debt.

The value of the residential real estate sector and the housing loans that finance it is an important part of the national economy. At the end of 2021, the banking sector's assets in the form of loans to households for the purchase or renovation of residential real estate amounted to around 38.8% of total loans⁷ and accounted for around 20% of banks' assets (NBP, 2022).

The residential real estate market and the closely related housing loan market in Poland experienced a period of dynamic development in the last 10 years. The growth of basic volumes – the number of loan agreements, the volume of lending for housing loans, the number of newly built flats and their transaction prices – was not disturbed even by perturbations related to housing loans granted in foreign currencies, including, above all, those denominated in CHF or granted directly in this currency. Declining interest rates on PLN housing loans based on the WIBOR rate, an increase in the population's income and the ambitious plans of individual banks for the dynamic development of this business segment resulted in a marked increase in both the volume and value of housing loans granted. This was also supported by the level of low interest rates, the level of which determines the borrower's repayment capacity and translates directly into the amount of the loan.

2. IMPACT OF GLOBAL EVENTS ON THE HOUSING LOAN MARKET IN POLAND

In the past two years, there have been global events that significantly affected many areas of the economy. In 2020, the outbreak of the Covid-19 pandemic re-

⁶ The result was obtained as the quotient of the total debt stock (Chart 3) and the number of active credit agreements (Chart 2).

⁷ Loans and other receivables of banks from other domestic sectors (Non-MFIs excluding central government) consisting of loans to households, businesses and institutions serving households at the end of 2021 amounted to approximately PLN 1 318,3 billion, (www3).

sulted in months of isolation (so-called lockdown) in many countries. The situation left much of the global economy in its worst crisis in years. Unprecedented global travel bans, the implementation of stay-at-home policies and assembly bans affected around 90% of the world's population, consequently contributing to a widespread reduction in mobility on an unprecedented scale (Gossling et al., 2020). Examples include disrupted supply chains, especially from Asian destinations, and well-known problems with electronic parts for car manufacturing, among others, which significantly affected their supply in 2020 and 2021. The periods of closure also caused disruptions for many small and medium-sized enterprises, which were unable to produce and provide their services at 2019 levels. According to Czech et al., (2020) the Covid-19 crisis, unlike the 2008–2009 crisis, is a phenomenon caused by a factor entirely independent of the presence of structural problems in the economy. Miglionico (2020) draws attention to the scale of temporary and short-term interventions by regulators during the pandemic period, in terms of the impact of exceptional credit schemes on consumer–borrowers.

In February 2022, the outbreak of war in Ukraine and the sanctions imposed in response to Russian aggression, caused significant problems in the energy sector in many European countries. The blocking of oil and gas imports from Russia in the absence of sufficient alternative supplies caused a significant increase in uncertainty in the markets, resulting in higher prices for energy carriers and a large increase in operating costs for most companies. Similar problems have also affected Poland. According to experts from the World Bank (World Bank, 2022), the war is having a devastating effect on human life and causing significant economic losses in the countries involved. This is the second major upheaval in two years in this part of the world.

The impact of the above events on the housing market is discussed by Łaszek (2022), pointing out that readings of real estate market indicators, including a decline in the availability of credit and a reduction in transactional housing prices as well as a reduction in housing starts point to a stagflationary deceleration of the sector after the boom occurring in recent years prior to 2020 (ZBP, 2022). In the context of the rental property market, on the other hand, as Strugała (2020) notes, the pandemic crisis will result in an increase in the cost of rental housing.

In addition to the impact on the housing market, the Covid-19 pandemic and the war in Ukraine are also having a very significant impact on the financial sector. Poland initially saw a reduction in interest rates by the Monetary Policy Council to historic lows in 2020⁸. This change, introduced to counteract the existing constraints on businesses resulting from the Covid-19 pandemic, resulted in lower interest rates on loans, including housing loans. Rising inflation in subsequent

⁸ Level of NBP rates in the period from 29th May 2020 to 7th October 2021 [in %]: Reference rate 0,1; Lombard rate 0,5; NBP deposit rate 0; Rediscount rate 0,11 and Discount rate 0,12 (www4).

quarters, starting in April 2021, caused the Monetary Policy Council to raise interest rates from 7 October 2021. At the same time, there was also an increase in the WIBOR 3M rate, which was at a record low of 0,21–0,26% from June 2020 to September 2021 and rose from this level during the year to 7,25% (www2).

Such a sharp increase in interest rates on PLN housing loans has caused anxiety among borrowers, especially those who took out a housing loan during the period when WIBOR 3M rates were operating at a low level of less than 2% between 2015 and 2021. With the WIBOR 3M rate rising sharply, the level of housing loan instalments is also rising dynamically. It should be added that in the period from 2015 to 2021, the number of active housing loan contracts increased from 1 994 677 contracts to 2 548 560 contracts (by 553 883) with a simultaneous increase in housing loan debt in this period by PLN 136,18 billion⁹. This means that the group of housing borrowers who took out a loan during the period of low interest rates (WIBOR 3M and 6M below 2%) accounts for more than 21% of all borrowers with a housing loan.

3. REASONS FOR THE INTRODUCTION AND DESIGN OF THE "CREDIT HOLIDAYS" PROGRAM

Tomaszewska-Rutkowska and Zwaliński (2021) note that occurring states of emergency - such as a pandemic - can generate abuses by financial entities directed towards consumers. In their article, the authors refer to "credit holidays" introduced by banks during the 2020 pandemic. Urban-Theocharakis (2020) points out that the term '*credit holidays*' emerged and became widespread during the Covid-19 pandemic period. This was related to the introduction of a non-statutory moratorium in April 2020 by banks in Poland and parts of the European Union, which allowed banks to postpone or suspend loan repayments for 3 or 6 months without any contract, depending on a type of borrower. The indirect effect of these measures, which was also associated with temporary suspension of lending in most banks, as noted by Korzeb and Niedziółka (2020) was an increase in solvency ratios with a simultaneous deterioration in banks' profitability.

A certain form of assistance to a large number of borrowers in the current exceptional market conditions (a large jump in interest rates) has now become the "credit holiday" program for people repaying housing loans in zloty.

To this end, the Legislator in the Act of 7 July 2022 "*On community financing for economic ventures and borrower assistance*" introduced "credit holidays" for a group of borrowers. Chapter 10 of the Act "*Episodic, transitional and final provisions*" contains provisions allowing borrowers to suspend the payment of eight

⁹ Data is given on the basis of Charts 2 and 3.

instalments of a single mortgage loan intended to meet their housing needs. The suspension period is 8 months, whereby:

- in the period from 1 August 2022 to 30 September 2022, the suspension applies to two months;
- in the period from 1 October 2022 to 31 December 2022, the suspension applies for two months;
- for the period from 1 January to 31 December 2023, the suspension applies for 4 months, at a rate of one month per quarter.

The borrower taking advantage of the 'credit holidays' is free to choose the number of months of suspension and the specific months in which the suspension of payments is to take effect. The credit holidays apply to PLN loans with a remaining maturity of more than six months, granted before 1 July 2022. The provisions of the law also specify that during the suspension period, the borrower does not incur any fees, with the exception of the insurance premium fee associated with the credit agreement. This means that during the suspension months selected by the borrower, the interest rate on the loan is 0%. In addition, the provisions in the Act provide for the extension of the loan repayment period by a number of months resulting from the application for suspension of repayment. It is important to note that the available solution may be used by any borrower with a housing loan, as the legislator did not provide for the introduction of other criteria (e.g. income criteria).

As Marcinkowska (2022) points out, the regulation introduced in July 2022 does not meet the requirement of fairness, as it allows any borrower, regardless of the interest rate method included in the contract and income level to benefit from the program. The regulations introduced may increase banks' costs, which will translate into prices for their services in the long term.

This article examines the economic effect of using the introduced "credit holidays" for an individual borrower in a situation where they allocate the entirety of the saved instalments to overpayment of the loan. At the same time, the author recognizes the problem that lenders faced with the introduction of this solution. The short period of time that banks have to prepare for the introduction of the solution in the regulatory, IT and marketing areas, the burden resulting from the lack of interest income from suspended loans over a period of eight months means that it is the banks that have borne and will bear the costs of introducing this solution in the long term.

It should be mentioned that, as of November 2022, 53% of eligible borrowers have taken advantage of "credit holidays", and the value of credit agreements covered by this solution amounts to 64% of the value of the housing loan portfolio (www5). At the same time, Białek (Vice President of the ZBP) estimates that the

scale of submitted applications for full “credit holidays” is small and is expected to increase in the following months (www5).

4. „CREDIT HOLIDAYS" – AN EMPIRICAL STUDY

The aim of the study was to find out whether the application of “credit holidays” in full for selected mortgages, and the reallocation of the saved funds to overpayment of the loan would significantly affect the amount of the principal at the end of the suspension period, and significantly reduce the loan instalment. The study will verify two research hypotheses:

Hypothesis 1 – the borrower's use of “credit holidays” will reduce the loan principal at the end of 2023 by min. 5% compared to the value of the loan principal that was repaid according to the original schedule and

Hypothesis 2 – borrower's recourse to “credit holidays” will reduce the fixed instalment amount at the end of 2023 by at least 10% compared to the fixed instalment amount that was repaid according to the original schedule.

4.1 Types of housing loan instalments

Mortgage backed housing and construction loans with a long duration (up to a maximum of 35 years) use either a decreasing or fixed instalment:

- 1) A **decreasing instalment** is calculated as the sum of the quotient of the loan capital and the number of months of the loan duration, plus interest calculated on the capital balance for the month. The characteristic feature of this form of loan repayment is the fixed value of the capital instalment and the decreasing value of the interest instalment resulting from the capital repayment. As the interest rate increases, the interest instalment increases while the capital instalment remains unchanged.
- 2) In the case of a **fixed (annuity) instalment**, the calculation of the amount of the credit instalment results from the following formula¹⁰:

$$I = \frac{N * r}{k(1 - (\frac{k}{k+r})^n)}$$

where:

I – fixed instalment,

¹⁰ (www6).

N – loan amount,
k – number of instalments payable per year,
r – interest rate per annum,
n – number of instalments.

The characteristic feature of this form of repayment is the fixed value of the capital and interest instalment over a given period in which the interest rate does not change, also known as the stabilization period. In Poland, for housing and mortgage loans, the interest rate on PLN loans is based on WIBOR 3M or WIBOR 6M and a fixed bank margin. This means that in the case of a loan based on the WIBOR 3M rate, the interest rate changes every three months (the bank changes the WIBOR rate in its system for a given day), while in the case of loans based on the WIBOR 6M rate, the interest rate changes as a rule every six months. WIBOR rates and the rules for updating them are always included in the loan agreement. Banks use similar methods to determine the WIBOR rate for a home loan at the time of interest rate change – most often it is the WIBOR rate from the date of interest rate change.

The fixed instalment is therefore 'fixed' only until the bank changes the contractual interest rate on the loan. In fact, only the bank's margin specified in the contract is fixed in the long term¹¹.

As the interest rate increases, the annuity instalment of the loan increases, with the proportion of the capital and interest instalment in the total instalment changing in favor of the interest instalment.

Chart 4 shows how, for a loan of PLN 250 000 granted in 2010, there was a change in the amount of capital and interest in the fixed instalment of the loan during the repayment period from 2010 to July 2022. Additionally, the dotted line indicates the WIBOR 3M rate during this period.

¹¹ Assuming that the terms of the agreement are adhered to by the borrower. The bank's margin may increase if additional covenants of the home loan agreement are not met - e.g. a decrease in the borrower's account turnover, cancellation of a bank product allowing a margin reduction, an end of a promotional period, etc.

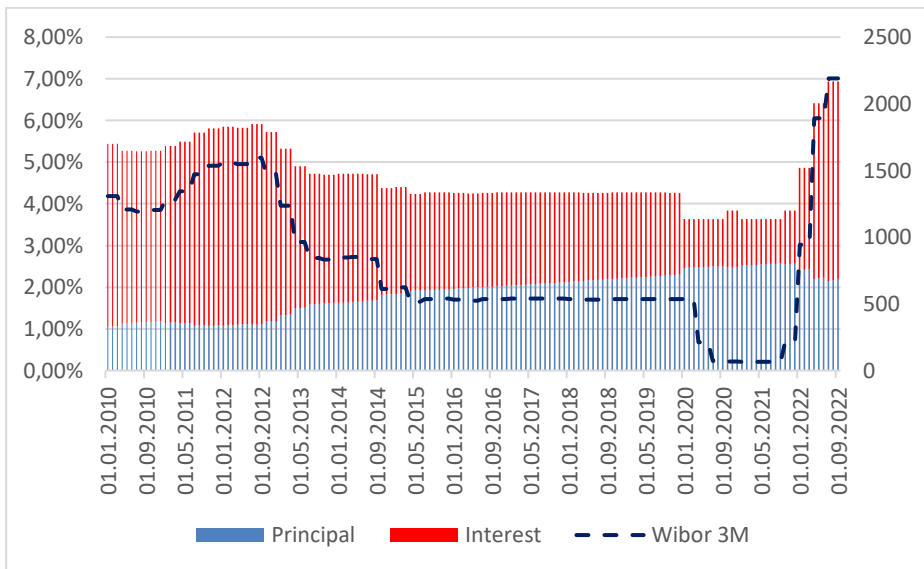


Chart 4. Structure of a fixed instalment of a housing loan in the amount of PLN 250 000 over the repayment period against the background of WIBOR 3M

Source: own study¹².

An analysis of Chart 4 shows a step change in the proportion of the interest rate in the fixed instalment at the expense of the capital instalment at the time of a large increase in the WIBOR 3M base rate, from January 2022. At the same time, it should be noted that in the initial repayment period, the high share of the interest instalment is due to the high capital base of the loan, the repayment of which is only at an early stage. This means that in the first three years of the loan repayment, the amount of capital repaid is significantly lower, as the share of the capital instalment in the total instalment repaid does not exceed 25%.

It should be added that at the beginning of the home loan repayment, the fixed (annuity) instalment is always lower than the decreasing instalment, assuming, of course, the same loan term and interest rate level. During the bank's examination of creditworthiness, this means above all a higher possible amount of credit for applicants and this form of credit repayment is more frequently chosen.

Factors influencing the amount of the fixed instalment and the share of capital and interest in the instalment are:

- 1) the initial term of the loan – the shorter it is, the more favorable the relationship between capital and interest instalments;

¹² Source for WIBOR 3M – (www2).

2) the interest rate of the loan – the lower it is, the higher the share of the capital instalment in the total instalment.

Therefore, from the borrower's point of view, the later in the course of the repayment of the loan, the higher the interest rate, the better off the borrower is, as there is then a lower value of capital subject to interest. For borrowers who took out a home loan in 2019 or 2020 with a fixed instalment repayment, which is based on WIBOR 3M or 6M – in the current conditions the instalment amount has increased significantly.

4.2 Use of "credit holidays" in practice with selected examples

The author of the article has made a comparison of two loans granted in 2010 and 2020 in amounts corresponding to the loan value for a given year. The purpose of the comparison is to present the impact of the use of state aid in the repayment of a housing loan in the form of "credit holidays" on the amount of the capital remaining to be repaid in a situation where all the funds saved are used to overpay the loan.

In carrying out the calculations, certain simplifications were applied due to the specificity of the problem under analysis. It was assumed that the calculated amount of the instalment in July 2022 will not be changed until the end of 2023 (which also means no change in the interest rate of the loan). This approach allows for a simplified calculation of the amount of capital to be repaid. The differences that occur between the actual capital repayment and the one used in the article are not material for the final conclusions. The overpayment of the loan from the funds saved as a result of using "credit holidays", for the sake of the correctness of the calculation, takes place in December 2023.

Example 1

A housing loan of PLN 250 000 was taken out in January 2010. Loan term – 300 months (25 years). Interest rate at the time of signing the loan agreement – 6,58% (WIBOR 3M [4,19%] + bank margin [2,39%¹³]). Repayment was applied in the form of a fixed instalment (annuity) with a variable interest rate updated by the bank every three months.

The principal figures for the loan for the selected dates – January 2010, January 2015, January 2020 and July 2022 – are presented in Table 1.

¹³ Average margin for mortgages in 2010 assumed, source (www7).

Table 1. Basic data of the PLN 250000 loan with calculation of the capital and interest instalments for selected periods¹⁴

Specification	Loan data for a period of:			
	January 2010	January 2015	January 2020	July 2022
WIBOR 3M	4,19%	2,00%	1,71%	7,01%
average margin	2,39%	2,39%	2,39%	2,39%
interest rate	6,58%	4,39%	4,10%	9,40%
fixed instalment amount	1 700,54	1 412,43	1 387,60	1 851,62
- principal	329,70	587,97	750,98	578,94
- interest	1370,83	824,46	636,62	1272,68
number of months remaining to be repaid	300	240	180	149
principal outstanding	250 000	225 367	186 328	162 470

Source: own study.

Table 2. Results of applying a loan holiday and allocating all unpaid instalments to overpayment of the loan principal PLN 250 000

Description	Amount saved (8 months * fixed instalment)	Total amount of capital repayment during the credit holidays period	Loan principal at 31.12.2023	Instalment amount in January 2024
application of "credit holidays"	14 813	20 023	142 446	principal 563 interest 1 116 1 679¹⁵
non-application of "credit holidays"	0	9 842	152 628	principal 663 interest 1 195 1 859

Source: own study.

The amount saved is the product of the fixed instalment of July 2022 and the number eight (the borrower does not pay instalments for eight selected months

¹⁴ Calculations were made using the PPMT and IMPT formulas in an excel spreadsheet and a calculator available on the website (www.8).

¹⁵ The calculation of the instalment rate takes into account the extension of the loan period by the number of instalments (8).

from August 2022 to the end of 2023). The total capital repayment amount was calculated as the sum of the amount saved and the product of the capital instalment value and the number nine (this is the number of months the borrower taking advantage of "credit holidays" will make the instalment repayment according to the original schedule). A borrower who has made use of "credit holidays" and will make an overpayment of the loan, allocating for this purpose the entire amount of the funds saved as a result of not paying credit instalments for eight months, will reduce the value of the loan principal by PLN 10 182 in comparison with the situation if they had not used this option. This, in turn, will make it possible to reduce the loan instalment in January 2024 by PLN 180, assuming that the value of the loan interest rate in that month will be similar to the value of the interest rate in July 2022.

Example 2

A housing loan of PLN 303 000 was taken out in January 2020. Loan term – 300 months (25 years). Interest rate at the time of signing the loan agreement – 3,87% (WIBOR 3M [1,71%] + bank margin [2,16%¹⁶]). Repayment applied in the form of a fixed instalment (annuity) with a variable interest rate updated by the bank every three months.

Table 3. Basic data of the PLN 303000 loan with calculation of the capital and interest instalments for selected periods

Specification	Loan data for a period of:	
	January 2020	July 2022
WIBOR 3M	1,71%	7,01%
average margin	2,16%	2,16%
interest rate	3,87%	9,17%
fixed instalment amount	1 577,68	2 477,53
- principal	600,50	319,49
- interest	977,18	2 158,04
number of months remaining to be repaid	300	269
principal outstanding	303 000	282 404

Source: own study.

¹⁶ The average margin for mortgages in 2020 was assumed based on ZBP (2020).

Table 4. Results of applying loan holidays and allocating all unpaid instalments to overpayment of the loan principal PLN 303 000

Description	Amount saved (8 months * fixed installment)	Total amount of capital re-payment during the credit holidays period	Loan principal at 31.12.2023	Instalment amount in January 2024
application of the "credit holidays"	19 820	22 695	259 709	principal 318 interest 1 985 2 303¹⁷
non-application of "credit holidays"	0	5 431	276 973	principal 364 interest 2116 2 480

Source: own study.

A borrower who takes advantage of a "credit holiday" and makes an overpayment of the loan, allocating for this purpose all the funds saved from not paying the loan instalments for eight months, will reduce the value of the loan principal by PLN 17 264 with respect to the situation if they had not taken advantage of this option. This will also enable them to reduce the loan instalment in January 2024 by PLN 177, assuming that the value of the loan interest rate in that month will be similar to the value of the interest rate in July 2022.

Such significant differences in the amount of the capital remaining to be repaid after the end of "credit holidays" for the loan in which they were applied, and the loan repaid according to the original schedule result from the fact that in the case of annuity repayments in the period of high interest rates, the share of the capital instalment in the amount of the instalment is significantly lower than in the situation when there is a lower interest rate (see Chart 4). Saving the entire instalment (a maximum of eight over the life of the program) and using it to repay only the principal of the loan significantly affects the size of the loan principal after the support ends. What should be stressed here is the fact that during the months of suspension of payments the loan interest rate is 0.

The application of "credit holidays" without using the saved funds for early repayment of the loan will allow the borrowers to keep PLN 14,8 thousand (Example 1) or PLN 19,8 thousand (Example 2) respectively, in their household budgets between August 2022 and December 2023. In the event that borrowers are affected by negative consequences of the events described above (e.g. loss of job,

¹⁷ The calculation of the instalment rate takes into account the extension of the loan period by the number of instalments (8).

reduction of income resulting from a decrease in the financial condition of employers, significant increase in the cost of living), the funds obtained as a result of taking "credit holidays" may improve their budget and facilitate the borrower's functioning in difficult markets.

A summary of the analysis of the selected housing loan cases, together with the results allowing for verification of the research hypotheses, is presented in Table 5.

Table 5. Summary of the results of the credit analysis carried out

Description	Principal outstanding at 12.2023		Instalment amount at 12.2023		Hypothesis verification	
	CH ¹⁸	non CH	CH	non CH	H1	H2
Example 1	142 446	152 628	1 679	1 859	Principal of loan with CH lower by 6,67%	Loan instalment with CH lower by 9,68 %
Example 2	259 709	276 973	2 303	2 480	Principal of loan with CH lower by 6,23%	Loan instalment with CH lower by 7,13%

Source: own study.

The obtained results of the analysis allow for verification of the research hypotheses set out at the beginning of the article. In the case of hypothesis 1 – *the borrower's use of "credit holidays" will reduce the principal of the loan at the end of 2023 by at least 5% compared to the value of the loan that was repaid according to the original repayment schedule* – the hypothesis was verified positively. As a result of using "credit holidays" in both analyzed loans, the principal of the loan subject to "credit holidays" at the end of 2023 in the first and second case was lower by more than 5% (6,67% in Example 1, and 6,23% in Example 2). Hypothesis 2 – *borrower's recourse to "credit holidays" will reduce the fixed instalment amount at the end of 2023 by at least 10% compared to the fixed instalment amount that was repaid according to the original schedule* was verified negatively in both examples. With the use of "credit holidays", the loan instalment at the end of 2023 did not decrease by more than 10% compared to a loan where this option was not used. It should be noted, however, that in example 1, the result was similar – the instalment for the loan with "credit holidays" was 9,68% lower than the instalment for the loan without using the program.

¹⁸ „Credit Holidays”.

CONCLUSIONS

The aim of the article was to conduct a study on the impact of "credit holidays" introduced in 2022 on the amount of credit and housing loan instalments in the case of allocating the saved funds to overpayment of the loan. The article presents the characteristics of the residential real estate market in Poland, the dynamics of the value and a number of functioning housing loan contracts over the last 12 years. It also discusses the impact of global external events on the increase in inflation in Poland in 2021 and 2022, and the resulting increase in loan interest rates. The solution introduced by the Legislator in July 2022 (known as the "credit holidays") to counteract the effects of the increase in interest rates on PLN housing loans, which allowed borrowers with such loans to suspend their repayments for a period of time, was presented.

The conducted analysis gave rise to a positive verification of the hypothesis that allocating all of the funds saved through the use of "credit holidays" in the cases studied to the repayment of loans would allow the amount of capital at the end of 2023 to be reduced by more than 5% compared to the loan repaid according to the original schedule. This can be justified by the fact that in the current high interest rate environment, the share of the capital instalment is only about 30% of the total instalment. The overpayment of capital using "credit holidays" allows for a significant increase in the amount of overpaid credit. Furthermore, the study found that the reduction in instalments for loans covered by "credit holidays" did not exceed 10% compared to instalments on loans repaid according to the original schedule.

The presented solution of "credit holidays" does not have limiting conditions, which means that any borrower with a housing loan in PLN can use it. The results of the study allow us to conclude that, thanks to this solution, it is possible to obtain funds that will allow the loan principal to be overpaid, and allow the loan instalment to be reduced at the end of the program. In a situation of financial difficulties, it may make it easier for the borrowers to function in a hard and unstable period of time.

DECLARATION BY THE AUTHORS

The author declares no conflict of interest.

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